

structure such that the distal end of the inner elongated structure substantially coincides with the distal end of the outer tubular structure;

a stent accommodating area on the distal end of the inner elongated structure;

an external tubular structure contact area projecting from a surface of the inner elongated structure and located proximal to the stent accommodating area, the external tubular structure contact area able to frictionally slide against an interior surface of the outer tubular structure; and

at least one marker band on the inner elongated structure proximate the stent accommodating area.

5. (Amended) A system for delivering a stent into an anatomical structure, the system comprising:

an outer tubular structure having a proximal end and a distal end;

an inner elongated structure having a proximal end and a distal end, the inner elongated structure being located within the outer tubular structure such that the distal end of the inner elongated structure substantially coincides with the distal end of the outer tubular structure;

a stent accommodating area on the distal end of the inner elongated structure;

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an external tubular structure contact area projecting from a surface of the inner elongated structure and located proximal to the stent accommodating area, the external tubular structure contact area frictionally sliding against an interior surface of the outer tubular structure, wherein the external tubular structure contact area on the inner elongated structure comprises a plurality of external tubular structure contact areas projecting from the surface of the inner elongated structure, wherein each external tubular structure contact area on the inner elongated structure is separated from other external tubular structure contact areas, and wherein each subsequently proximal external tubular structure contact area on the surface of the inner elongated structure increases in durometer from the distal end to the proximal end of the inner tubular structure.

10. (Amended) A system for delivering a stent into an anatomical structure, the system comprising:

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an outer tubular structure having a proximal end and a distal end, wherein the outer tubular structure has a translucent region at its distal end; an inner elongated structure having a proximal end and a distal end, the inner elongated structure being located within the outer tubular structure such that the distal end of the inner elongated structure substantially coincides with the distal end of the outer tubular structure;

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a stent accommodating area on the distal end of the inner elongated structure; and

an external tubular structure contact area projecting from a surface of the inner elongated structure and located proximal to the stent accommodating area, the external tubular structure contact area frictionally sliding against an interior surface of the outer tubular structure.

13. (Amended) A system for delivering a stent into an anatomical structure, the system comprising:

an outer tubular structure having a proximal end and a distal end;

an inner elongated structure having a proximal end and a distal end, the inner elongated structure being located within the outer tubular structure such that the distal end of the inner elongated structure substantially coincides with the distal end of the outer tubular structure;

a stent accommodating area on the distal end of the inner elongated structure;

an external tubular structure contact area projecting from a surface of the inner elongated structure and located proximal to the stent accommodating area, the external tubular structure contact area able to frictionally slide against an interior surface of the outer tubular structure; and

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a gap between an external surface of the external tubular structure and the interior surface of the outer tubular structure.

14. (Amended) An inner elongated structure for a tubular stent delivery device used in deploying a stent into an anatomical structure, the inner elongated structure comprising:

an elongated structure;

a stent accommodating area on a distal end of the elongated structure and

shaped to receive a constrained length of a stent;

an engagement area projecting from the surface of the elongated structure and located proximal to the stent accommodating area, the engagement area able to frictionally slide against an interior surface of an outer tubular structure of a stent delivery device; and

at least one marker band on the elongated structure proximate the stent accommodating area.

19. (Amended) An inner elongated structure for a tubular stent delivery device used in deploying a stent into an anatomical structure, the inner elongated structure comprising:

an elongated structure;

a stent accommodating area on a distal end of the elongated structure and

shaped to receive a constrained length of a stent; and

an engagement area projecting from the surface of the elongated structure and located proximal to the stent accommodating area, the engagement area

able to frictionally slide against an interior surface of an outer tubular

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structure of a stent delivery device, wherein the engagement area on the elongated structure comprises a plurality of engagement areas projecting from the surface of the elongated structure, wherein each engagement area on the elongated structure is separated from other engagement areas, and wherein each subsequently proximal engagement area on the surface of the elongated structure increases in durometer from the distal end to the proximal end of the elongated structure.

24. (Amended) An inner elongated structure for a tubular stent delivery device used in deploying a stent into an anatomical structure, the inner elongated structure comprising:

an elongated structure;

stent accommodating means for accommodating a constrained length of a stent at a distal end of the elongated structure;

engagement means for frictionally engaging the elongated structure with an

interior surface of an outer tubular structure of a stent delivery device; and

marker means on the elongated structure within the stent accommodating means.

29. (Amended) An inner elongated structure for a tubular stent delivery device used in deploying a stent into an anatomical structure, the inner elongated structure comprising:

an elongated structure;

stent accommodating means for accommodating a constrained length of a stent

at a distal end of the elongated structure; and

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engagement means for frictionally engaging the elongated structure with an interior surface of an outer tubular structure of a stent delivery device, wherein the engagement means on the elongated structure comprises a plurality of engagement means projecting from the surface of the elongated structure, wherein each engagement means on the elongated structure is separated from other engagement means, and wherein each subsequently proximal engagement means on the surface of the elongated structure increases in durometer from the distal end to the proximal end of the elongated structure.

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34. (Amended) A method of deploying a stent with respect to an anatomical structure, the method comprising:

providing a stent delivery system, the system comprising:

an outer tubular structure having a proximal end, a distal end, and a translucent region at its distal end;

an inner elongated structure having a proximal end and a distal end, the inner elongated structure being located within the outer tubular structure such that the distal end of the inner elongated structure substantially coincides with the distal end of the outer tubular structure;

a stent accommodating area on the distal end of the inner elongated structure accommodating a stent;

an external tubular structure contact area projecting from a surface of the inner elongated structure and located proximal to the stent

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accommodating area, the external tubular structure contact area frictionally sliding against an interior surface of the outer tubular structure; and
at least one marker band on the inner elongated structure proximate the stent accommodating area;

inserting the stent delivery system through an insertion point in a body until the distal ends of the external tubular structure and the inner elongated structure are in a position within the anatomical structure;

viewing the marker band when the marker band is beneath the translucent region;

moving the outer tubular structure proximally while maintaining the position of the inner elongated structure, thus exposing the stent accommodating area and releasing at least part of the stent into the anatomical structure; and

continuing the proximal movement of the outer tubular structure with respect to the inner elongated structure until the stent is completely deployed into the anatomical structure; and

withdrawing the stent delivery system from the insertion point in the body.

39. (Amended) A method of deploying a stent with respect to an anatomical structure, the method comprising:

providing a stent delivery system, the system comprising:

an outer tubular structure having a proximal end and a distal end;

an inner elongated structure having a proximal end and a distal end, the

inner elongated structure being located within the outer tubular

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structure such that the distal end of the inner elongated structure substantially coincides with the distal end of the outer tubular structure;

a stent accommodating area on the distal end of the inner elongated structure accommodating a stent; and

an external tubular structure contact area projecting from a surface of the inner elongated structure and located proximal to the stent accommodating area, the external tubular structure contact area able to frictionally slide against an interior surface of the outer tubular structure, wherein the external tubular structure contact area on the inner elongated structure comprises a plurality of external tubular structure contact areas projecting from the surface of the inner elongated structure, wherein each external tubular structure contact area on the inner elongated structure is separated from other external tubular structure contact areas, and wherein each subsequently proximal external tubular structure contact area on the surface of the inner elongated structure increases in durometer from the distal end to the proximal end of the inner tubular structure;

inserting the stent delivery system through an insertion point in a body until the distal ends of the external tubular structure and the inner elongated structure are in a position within the anatomical structure;

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moving the outer tubular structure proximally while maintaining the position of the inner elongated structure, thus exposing the stent accommodating area and releasing at least part of the stent into the anatomical structure;

continuing the proximal movement of the outer tubular structure with respect to the inner elongated structure until the stent is completely deployed into the anatomical structure; and

withdrawing the stent delivery system from the insertion point in the body.

44. (Amended) A method of deploying a stent with respect to an anatomical structure, the method comprising:

providing a stent delivery system, the system comprising:

an outer tubular structure having a proximal end and a distal end, wherein

the outer tubular structure has a translucent region at its distal end;

an inner elongated structure having a proximal end and a distal end, the

inner elongated structure being located within the outer tubular structure such that the distal end of the inner elongated structure substantially coincides with the distal end of the outer tubular structure;

a stent accommodating area on the distal end of the inner elongated structure accommodating a stent; and

an external tubular structure contact area projecting from a surface of the inner elongated structure and located proximal to the stent accommodating area, the external tubular structure contact area

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able to frictionally slide against an interior surface of the outer tubular structure;

inserting the stent delivery system through an insertion point in a body until the distal ends of the external tubular structure and the inner elongated structure are in a position within the anatomical structure;

moving the outer tubular structure proximally while maintaining the position of the inner elongated structure, thus exposing the stent accommodating area and releasing at least part of the stent into the anatomical structure;

continuing the proximal movement of the outer tubular structure with respect to the inner elongated structure until the stent is completely deployed into the anatomical structure; and

withdrawing the stent delivery system from the insertion point in the body.

46. (Amended) A method of deploying a stent with respect to an anatomical structure, the method comprising:

providing a stent delivery system, the system comprising:

an outer tubular structure having a proximal end and a distal end;

an inner elongated structure having a proximal end and a distal end, the

inner elongated structure being located within the outer tubular structure such that the distal end of the inner elongated structure substantially coincides with the distal end of the outer tubular structure;

a stent accommodating area on the distal end of the inner elongated structure accommodating a stent;

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an external tubular structure contact area projecting from a surface of the inner elongated structure and located proximal to the stent accommodating area, the external tubular structure contact area able to frictionally slide against an interior surface of the outer tubular structure; and

a gap between an external surface of the external tubular structure and the interior surface of the outer tubular structure;

inserting the stent delivery system through an insertion point in a body until the distal ends of the external tubular structure and the inner elongated structure are in a position within the anatomical structure;

moving the outer tubular structure proximally while maintaining the position of the inner elongated structure, thus exposing the stent accommodating area and releasing at least part of the stent into the anatomical structure;

continuing the proximal movement of the outer tubular structure with respect to the inner elongated structure until the stent is completely deployed into the anatomical structure; and

withdrawing the stent delivery system from the insertion point in the body.--

REMARKS

Claims 1-46 are pending. By this amendment, Applicants amend claims 1, 5, 10, 13, 14, 19, 24, 29, 34, 39, 44 and 46.

In the Office Action dated October 11, 2002, the Examiner rejected claims 1-46 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 5,306,294 to Winston et al. As the rejection applies to the pending claims, Applicants respectfully traverse

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